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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/770.792	12/20/96	KOYAMA	J 07977/105001

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ESM1/0115

EXAMINER

GROSS, A

ART UNIT

PAPER NUMBER

2515

6

DATE MAILED: 01/15/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-16 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-16 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☒ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

-SEE OFFICE ACTION ON THE FOLLOWING PAGES-

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as admitted by Applicant on page 2, lines 14-23, in view of Shirasawa, JP 57-99615.

Applicant admits on page 2, lines 14-23, and shows in Figure 4, that a conventional liquid crystal display includes an active matrix with pixel TFTs and signal and scanning driving circuits, both formed of TFTs, on one substrate, all surrounded by a sealant material, a counter substrate, and a liquid crystal in between, covering the pixel TFTs and the drive circuit TFTs. Three edges of the substrates are cut together such that the cut edges are parallel and perpendicular to the rows or columns of the TFT array. Thus, the only difference between claims 1, 2, 9, and 10 and the admitted prior art is that the claims include a non-conductive material applied to the cut surfaces. However, Shirasawa teaches in the abstract preventing deterioration of an organic sealant due to the penetration of water by coating the outside of the sealant with a non-conductive hydrophobic organic material. Shirasawa shows in the figure that the coating is applied to overlap one of the substrate edges. Therefore, it would have been obvious to coat a non-conductive hydrophobic organic material over the seal and cut surface of the substrates to prevent deterioration of the seal [in the admitted prior art.] Accordingly, claims 1, 2, 9, and 10 would have been obvious over the admitted prior art in view of Shirasawa.

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Claims 3-8 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as admitted by Applicant on page 2, lines 14-23, in view of Shirasawa, JP 57-99615, as applied to claims 1, 2, 9, and 10 above, and further in view of Spruijt et al, PN 4,394,067.

Spruijt et al teach in column 1, lines 16-64, that by providing the control circuit as an integrated circuit on the electrode substrate, the number of electrical connections to the exterior is reduced. Further, by placing the circuit in the rim of the sealing material between the two substrates provides a good mechanical and impervious protection of the circuit. However, since the size of the chip is larger than the thickness of the liquid crystal layer, to accommodate the circuit in the rim of the seal, one must recess a cavity in the supporting plates. Therefore, it would have been obvious to thin the substrates to accommodate a control circuit and to include the control circuit on the TFT substrate in the sealing material at the accommodation portion to reduce the number of electrical connections to the exterior, provide a good mechanical and impervious protection of the circuit, and provide sufficient space for the circuit. Therefore, claims 3-8 and 11-16 would have been obvious over the admitted prior art in view of Shirasawa and Spruijt et al.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sawatsubashi et al, PN 5,148,301, teaches forming the driving circuit inside the seal. Yamanaka, JP 6-123882, teaches improving the sealing performance by providing a filler with a moisture resisting function between the two substrates and adjacent the edges of the substrates. Ikuno, JP 4-355720, teaches in the abstract applying a moistureproof agent on the outer periphery

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of the sealant to prevent moisture absorption or moisture permeation from the seal. Hinata et al teaches in the abstract forming a flexible gas barrier film over the seal and substrate edges when flexible substrates are used to prevent bubble formation.

Any inquiry concerning this communication should be directed to Anita Pellman Gross at telephone number (703) 308-4869.

The fax phone number for this Art Unit is (703) 308-7726.



ANITA PELLMAN GROSS
PRIMARY EXAMINER
GROUP 2500

A. Gross
January 4, 1998